

INTISARI

Permasalahan penurunan daya ingat dan fungsi kognitif seiring bertambahnya usia menjadi hal krusial. Pegagan berpotensi menjadi suplemen kesehatan dengan kandungan antioksidan terpenoid dan flavonoid untuk melindungi syaraf otak dan meningkatkan memori spasial. Inovasi *jelly candy* merupakan alternatif bagi masyarakat dengan kesulitan menelan tablet. Penelitian ini bertujuan untuk mengevaluasi pengaruh variasi kadar glukomanan dan kappa-karagenan terhadap karakteristik fisik serta daya antioksidan *jelly candy* ekstrak herba pegagan.

Penelitian dilakukan secara eksperimental. Ekstrak herba pegagan diperoleh melalui metode maserasi dengan pelarut etanol 70%. Aktivitas antioksidan ekstrak tersebut diuji dengan metode reduksi DPPH dan diformulasikan dalam sediaan *jelly candy*. Uji karakteristik fisik *jelly candy* meliputi organoleptis, keseragaman bobot, *loss on drying*, pH, dan elastisitas. Respon uji karakteristik fisik dianalisis dan dioptimasi menggunakan *Design Expert 13* dengan metode *Simplex Lattice Design*. Hasil respon formula optimal dianalisis dengan *one-sample t-test* SPSS 25.

Hasil menunjukkan bahwa kombinasi *gelling agent* berpengaruh terhadap peningkatan keseragaman bobot, elastisitas, dan *loss on drying*. Formula optimal *jelly candy* dengan komposisi kappa-karagenan 1,33% dan glukomanan 0,67% memiliki aktivitas antioksidan sebesar 197,49 ppm. Verifikasi respon karakteristik fisik formula optimal terkait keseragaman bobot, elastisitas, dan *loss on drying* terbukti tidak berbeda signifikan ($p > 0,05$) dari nilai prediksi dari *Design Expert 13*.

Kata kunci: Pegagan, antioksidan, *jelly candy*, kappa karagenan-glukomanan.

ABSTRACT

The problem of decreasing memory and cognitive function with age becomes crucial. *Centella asiatica* has the potential to be a health supplement containing terpenoid and flavonoid antioxidants to protect brain nerves and improve spatial memory. Jelly candy innovation is an alternative for people who have difficulty swallowing tablets. This study aims to evaluate the effect of varying levels of glucomannan and kappa-carrageenan on the physical characteristics and antioxidant power of jelly candy extract of the gotu kola herb.

The research was conducted experimentally. *Centella asiatica* herb extract was obtained by maceration with 70% ethanol. The antioxidant activity of the extract was tested using the DPPH reduction and formulated into jelly candy. Physical characteristics of jelly candy include organoleptic, weight uniformity, loss on drying, pH, and elasticity. Physical characteristic responses were optimized using Design Expert 13 with Simplex Lattice Design. The results of the optimal formula response were analyzed by one-sample t-test SPSS 25.

The results showed that kappa-carrageenan and glucomannan affected increasing the uniformity of weight, elasticity, and *loss on drying*. The optimal formula for jelly candy with a composition of 1.33% kappa-carrageenan and 0.67% glucomannan has an antioxidant activity of 197.49 ppm. Verification of the response of the optimal formula physical characteristics proved not significantly different ($p > 0.05$) from the predicted value of Design Expert 13.

Keywords: Gotu Kola, antioxidant, jelly candy, kappa carrageenan-glucomannan.